


International  
**IR** Rectifier

## MB High Voltage SERIES

**SINGLE PHASE BRIDGE**

**Power Modules**

### Features

- Universal, 3 way terminals:  
push-on, wrap around or solder
- High thermal conductivity package,  
electrically insulated case
- Center hole fixing
- Excellent power/volume ratio
- UL E 62320 approved 
- Nickel plated terminals solderable as per MIL-STD-202 Method  
208; solder: Sn/Pb (60/40); solder temperature: 235-260°C  
max. time: 8-10 secs

25 A  
35 A

### Description

A range of extremely compact, encapsulated single phase bridge rectifiers offering efficient and reliable operation. They are intended for use in general purpose and instrumentation applications.

### Major Ratings and Characteristics

Parameters	26MB-A	36MB-A	Units
$I_O$	25	35	A
@ $T_C$	70	55	°C
$I_{FSM}$ @ 50Hz	400	475	A
@ 60Hz	420	500	A
$I^2t$ @ 50Hz	790	1130	A <sup>2</sup> s
@ 60Hz	725	1030	A <sup>2</sup> s
$V_{RRM}$ range	1400 to 1600		V
$T_J$	-55 to 150		°C

**ELECTRICAL SPECIFICATIONS**

Voltage Ratings

Type number	Voltage Code	$V_{RRM}$ , maximum repetitive peak reverse voltage V	$V_{RSM}$ , maximum non-repetitive peak rev. voltage V	$I_{RRM}$ max. @ $T_J$ max. mA
26MB..A	140	1400	1500	2
36MB..A	160	1600	1700	

Forward Conduction

Parameters		26MB-A	36MB-A	Units	Conditions
$I_O$	Maximum DC output current	25	35	A	Resistive or inductive load
		20	28	A	Capacitive load
	@ Case temperature	65	60	°C	
$I_{FSM}$	Maximum peak, one-cycle non-repetitive forward current	400	475	A	t = 10ms No voltage reappplied
		420	500		t = 8.3ms 100% $V_{RRM}$ reappplied
		335	400		t = 10ms 100% $V_{RRM}$ reappplied
		350	420		t = 8.3ms 100% $V_{RRM}$ reappplied
$I^2t$	Maximum $I^2t$ for fusing	790	1130	A <sup>2</sup> s	t = 10ms No voltage reappplied
		725	1030		t = 8.3ms 100% $V_{RRM}$ reappplied
		560	800		t = 10ms 100% $V_{RRM}$ reappplied
		512	730		t = 8.3ms 100% $V_{RRM}$ reappplied
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	5.6	11.3	KA <sup>2</sup> √s	$I^2t$ for time $t_x = I^2\sqrt{t} \sqrt{t_x}$ ; $0.1 \leq t_x \leq 10ms, V_{RRM} = 0V$
$V_{F(TO)1}$	Low-level of threshold voltage	0.70	0.74	V	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$ , @ $T_J$ max.
$V_{F(TO)2}$	High-level of threshold voltage	0.75	0.79	V	$(I > \pi \times I_{F(AV)})$ , @ $T_J$ max.
$r_{t1}$	Low-level forward slope resistance	7.0	5.5	mΩ	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$ , @ $T_J$ max.
$r_{t2}$	High-level forward slope resistance	6.4	5.2	mΩ	$(I > \pi \times I_{F(AV)})$ , @ $T_J$ max.
$V_{FM}$	Maximum forward voltage drop	1.25	1.3	V	$T_J = 25^\circ C, I_{FM} = 40A_{PK}(26MB)$ $T_J = 25^\circ C, I_{FM} = 55A_{PK}(36MB)$ tp = 400μs
$I_{RRM}$	Max. DC reverse current	10	10	μA	$T_J = 25^\circ C$ , per diode at $V_{RRM}$
$V_{INS}$	RMS isolation voltage base plate	2700	2700	V	f = 50 Hz, t = 1s

Thermal and Mechanical Specifications

Parameters		26MB-A	36MB-A	Units	Conditions
$T_J$	Junction temperature range	-55 to 150 °C			
$T_{stg}$	Storage temperature range	-55 to 150 °C			
$R_{thJC}$	Max. thermal resistance junction to case	1.7	1.35	K/W	Per bridge
$R_{thCS}$	Max. thermal resistance, case to heatsink	0.2		K/W	Mounting surface, smooth, flat and greased
wt	Approximate weight	20		g	
T	Mounting Torque ± 10%	2.0		Nm	Bridge to heatsink

Ordering Information Table

Device Code			
<b>36</b>	<b>MB</b>	<b>160</b>	<b>A</b>
①	②	③	④

<p><b>1</b> -</p> <p><b>2</b> -</p> <p><b>3</b> -</p> <p><b>4</b> -</p>	<p>Current rating code:</p> <p>Circuit configuration: MB = Single phase european coding</p> <p>Voltage code: MB series = code x 10 = <math>V_{RRM}</math></p> <p>Diode bridge rectifier: A = 26MB, 36MB Series</p>	<p>26 = 25A (Avg)</p> <p>36 = 35A (Avg)</p>
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Outline Table

0.8 (.03)    6.3 (.25)

10.5 (.41)    20.3 (.80)

21.5 (0.85)    9.5 (0.37)    28.5 (1.12)

5 (0.2)    \*12.7 (0.5)

28.5 (1.12)

Suggested plugging force:  
200 N max; axially applied to faston terminals

Not To Scale

All dimensions in millimetres (inches)

# MB High Voltage Series

Bulletin I27177 03/03

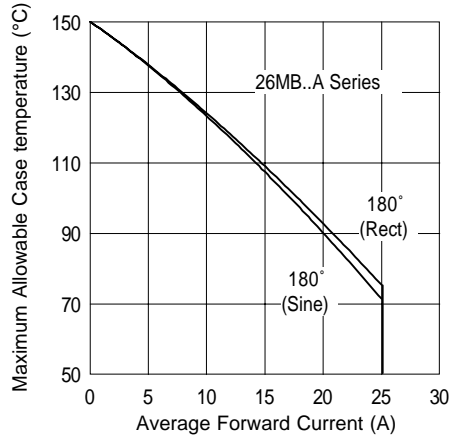


Fig. 1 - Current Ratings Characteristics

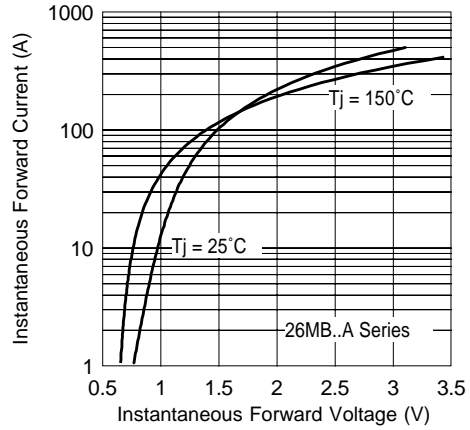


Fig. 2 - Forward Voltage Drop Characteristics  
Maximum Allowable Ambient Te

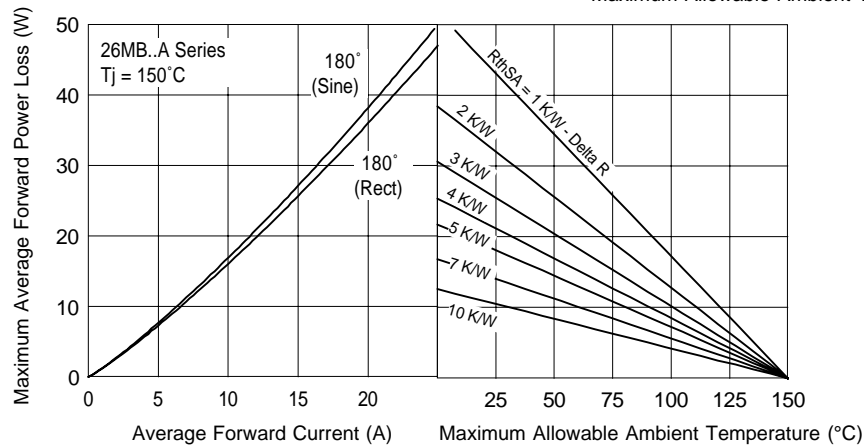


Fig. 3 - Total Power Loss Characteristics

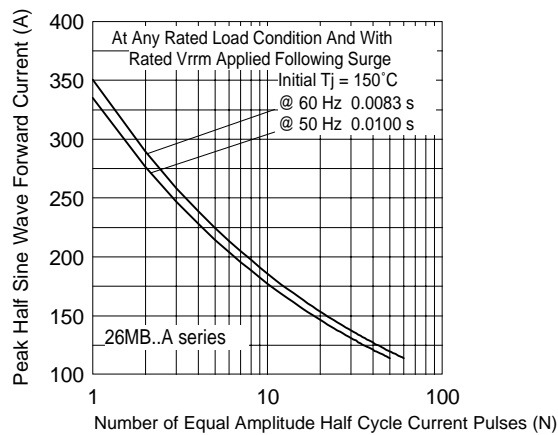


Fig. 4 - Maximum Non-Repetitive Surge Current

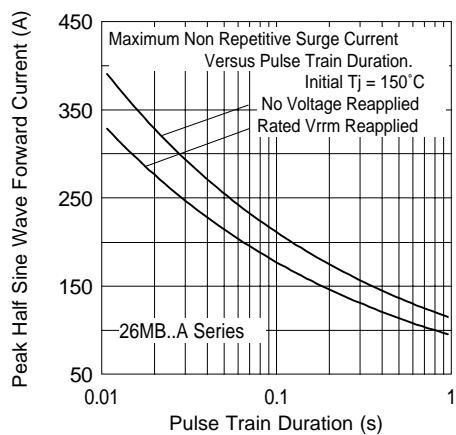


Fig. 5 - Maximum Non-Repetitive Surge Current

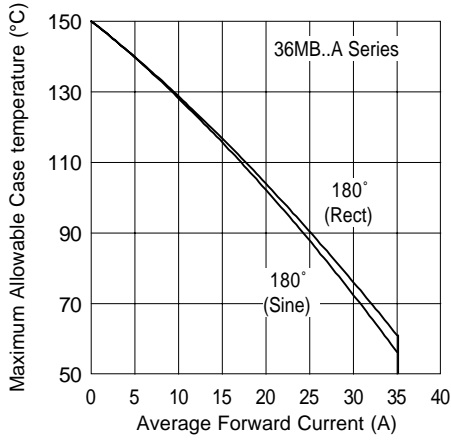


Fig. 6 - Current Ratings Characteristics

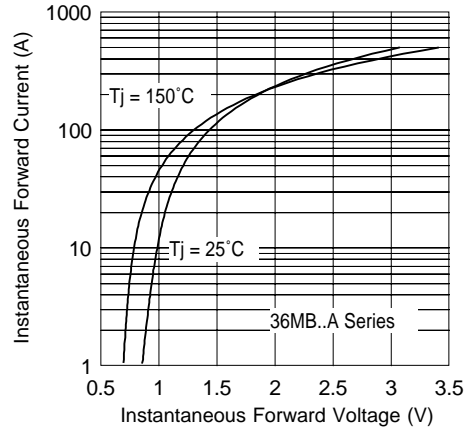


Fig. 7 - Forward Voltage Drop Characteristics  
Maximum Allowable Ambient  $T_e$

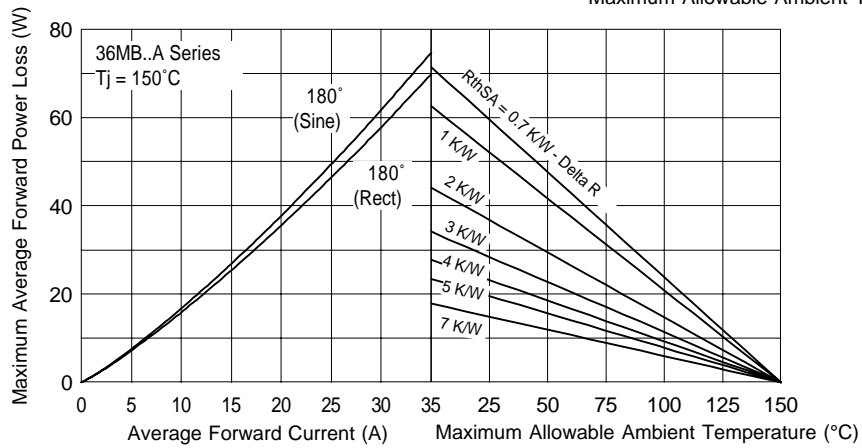


Fig. 3 - Total Power Loss Characteristics

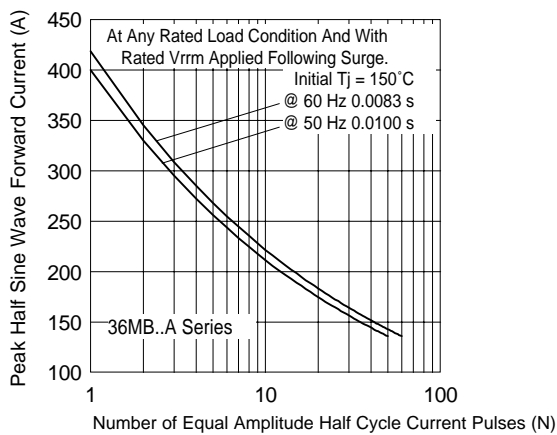


Fig. 9 - Maximum Non-Repetitive Surge Current

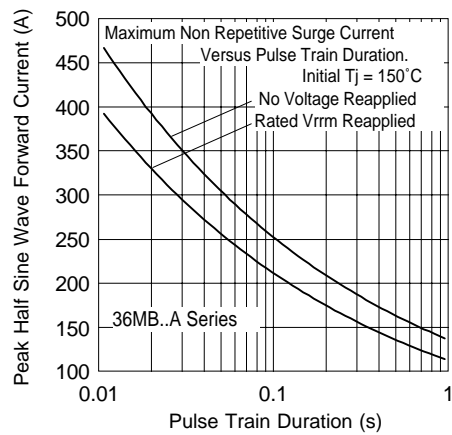


Fig. 10 - Maximum Non-Repetitive Surge Current

## **MB High Voltage Series**

Bulletin I27177 03/03

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Data and specifications subject to change without notice.  
This product has been designed and qualified for Industrial and Consumer Level.  
Qualification Standards can be found on IR's Web site.

International  
**IOR** Rectifier

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